

REMARKS

Claims 13-31 are pending in the application. Claims 13-31 have been rejected under 35 U.S.C. §102(e) as being deemed anticipated by U.S. Patent No. 6,389,462. (Cohen et al.) Of the Claims, Claims 13, 19, 21 and 27 are independent. Applicants thank the Examiner for granting an interview on September 20, 2006 to discuss proposed claim language in order to clarify the Applicants' invention. Claims have been amended to clarify the Applicants' invention. The application as amended and argued herein, is believed to overcome the rejections.

Regarding Rejections under 35 U.S.C. § 102(e)

Claims 13-31 have been rejected under 35 U.S.C. §102(e) as being deemed anticipated by U.S. Patent No. 6,389,462 (Cohen et al.).

An embodiment of the Applicants' invention is directed to dynamic replication of objects in a network storage system that includes a plurality of storage centers. The replication of objects stored in the storage centers occurs by storing a copy of an object in cache in a plurality of control nodes. The number of control nodes storing a respective copy of the object is dependent on the number of requests to retrieve the object. (*See*, for example, Fig. 10, Page 36, line 1 – Page 38. line 15.)

Turning to the cited reference, Cohen discusses a proxy redirector for transparently redirecting a request to an origin server to a proxy cache. The redirection is performed by translating the destination address of packets to the origin server to the destination address of a proxy cache provided by a domain naming service. A proxy redirector selects a proxy cache to which to forward client requests based on origin server IP address with requests for objects from a specific origin server being served by a specific proxy cache. (*See* col. 7, lines 46-47.)

Cohen fails to disclose or suggest at least

“in response to a subsequent request, upon determining that the subsequent request is to retrieve the same object as in a prior request, selecting a different control node; and

storing the object in another cache at the different control node, a number of control nodes each storing a respective copy of the object dependent on the number of requests to retrieve the object.”

and so fails to disclose the invention as recited in claim 13.

Cohen merely discusses selection of one of a plurality of proxy caches associated with an origin server based on a load balancing algorithm or on an arbitrary or random selection. After a TCP connection has been established with the selected proxy cache, requests for objects stored in an origin server are directed to the selected proxy cache.

There is no suggestion of selection of a different control node ““in response to a subsequent request, upon determining that the subsequent request is to retrieve the same object as in a prior request”. In contrast, the selection of a proxy cache is made based on round robin or least loaded based on IP header information such as the origin server IP address prior to sending a HTTP GET request to retrieve an object. Furthermore, after the proxy server has been selected and a TCP connection has been established to a particular proxy server, all subsequent packets that originate from the same client with the same TCP port number are forwarded to the same proxy server. Cohen does not teach or suggest a selection of a different control node based on the object to be retrieved.

In contrast in an embodiment of the Applicants’ claimed invention in response to a subsequent request, upon determining that the subsequent request is to retrieve the same object as in a prior request, a different control node is selected and the object is stored in another cache at the selected different control node. The number of control nodes each storing a respective copy of the object is thus dependent on the number of requests to retrieve the object. Thus, a popular object (based on the number of requests to retrieve the object) is stored in cache in multiple control nodes, increasing the cache hit rate. (See, for example, Fig. 10, “New Film Preview” in the Applicants’ application as originally filed.)

Claims 14-18 are dependent claims that depend directly or indirectly on claim 13, which has been shown to be distinguished over the cited art. Independent claims 19, 21 and 27 recite a like distinction and are thus distinguished over the cited art. Claim 20 depends directly on claim

19, claims 22-26 depend directly or indirectly on claim 21 and claim 28 depends directly on claim 27 and are thus distinguished over the cited reference.

Accordingly, the present invention as now claimed is not believed to be anticipated by the cited reference. Removal of the rejections under 35 U.S.C. § 102(e) and acceptance of claims 13-28 is respectfully requested.

CONCLUSION

Applicants are herewith submitting an IDS. It is respectfully requested that the Examiner consider and make of record in the subject application the information cited in this IDS.

In view of the foregoing, it is submitted that all claims (claims 13-31) are in condition of allowance. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the above-referenced application.

Please charge any shortages and credit any overcharges to Deposit Account Number 02-2666.

Respectfully submitted,

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